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# CORONARY CT ANGIOGRAPHY AFTER STRESS TESTING: RESULTS FROM A MULTICENTER, STATEWIDE REGISTRY, THE ADVANCED CARDIOVASCULAR IMAGING CONSORTIUM (ACIC)

ACC Oral Contributions
Ernest N. Morial Convention Center, Room 245
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Session Title: Coronary Calcium and CT Angiography: Pathophysiology, Prognosis and Cost-Effectiveness
Abstract Category: 36. CT Coronary Angiography
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**Background:** Recent data suggest that only a third of all patients undergoing elective invasive angiography have obstructive coronary artery disease (CAD). Coronary CT angiography (CCTA) excels as a noninvasive tool and could mitigate rates of normal or non-obstructive CAD on invasive angiography, particularly in patients with prior stress tests. In this large, multicenter registry, we determined the ability of risk factors, pre-test likelihood and stress test results to predict CAD severity on CCTA.

**Methods:** Patients without known CAD undergoing CCTA at 53 institutions in Michigan and participating in the ACIC were included. All had stress tests within preceding 3 months. Demographics, risk factors, pre-test likelihood by ACC/AHA criteria and results of stress tests were correlated with CAD severity on CCTA.

**Results:** Among the 6,198 (39.8%) patients studied, >50% stenosis was seen in 15.3% with normal, 20.2% with equivocal and 19.7% with abnormal stress results (p = NS). Independent predictors of >50% stenosis were male sex (OR 2.7, 95% CI 2.4-3.0), older age (OR 1.9, 95% CI 1.8-2.0), hypertension (OR 1.5, 95% CI 1.4-1.7), dyslipidemia (OR 1.4, 95% CI 1.3-1.5), diabetes (OR 1.3, 95% CI 1.17-1.52) and abnormal/equivocal stress test results (OR 1.3, 95% CI 1.19-1.44). Clinical risk factors were the strongest predictors of >50% stenosis on CCTA (C-statistic 0.75) compared to pre-test likelihood (C-statistic 0.56) or prior stress test results (C-statistic 0.53).

**Conclusions:** Among patients undergoing CCTA after stress testing, 20% have >50% stenosis on CCTA regardless of preceding test results. Clinical risk factors are the strongest predictors of significant CAD on CCTA. Current practice patterns of clinical CCTA utilization in this large state-wide registry suggest that this non-invasive diagnostic tool may aid in reducing rates of normal or non-obstructive findings on invasive angiography among patients with prior stress tests.